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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/269,518	06/15/2001	David Fenner	34703-00006	1149

7590

04/06/2005

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EXAMINER

HANAN, DEVIN J

ART UNIT

PAPER NUMBER

3745

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/269,518

Applicant(s)

FENNER ET AL.

Examiner

Devin Hanan

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/20/1999 9 - 22 - 00
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.84(h)(5) because Figure 1 shows modified forms of construction in the same view. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 13-23 and 25-31 are claims which depend on previously cancelled claims. For examination purposes, the claims were analyzed as if claims 13, 15-18, 22 and 23 were dependent from claim 12 and claims 25, 27-29 and 31 were dependent from claim 24. Correction of claim dependency is requested.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-23, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12, 13, 25 and 26 all describe a cross section of a deflector ring becoming increasingly broad. It is unclear as to how the broadening is occurring, an increase of diameter or an increase in thickness.

Claim 17 is inaccurate because it states that the axial length of the shroud is less than the axial length of the blade tip chord. According to figure 1 the distance in the axial direction from the leading edge outer blade tip to the trailing edge blade tip appears to be approximately the same as the axial length of the shroud.

Claims 20 and 21 are inaccurate because they state, "the fan has a part spherical shroud" whereas figure 1 shows a flat ring. The fixed duct and deflector ring can be described as spherical, but the shroud does not have that appearance.

Claim 23 is indefinite because the term "large" in claim 23 is a relative term which renders the claim indefinite. The term "large" is an unbased comparison not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 14-16, 18, 19 and 22 are indefinite by virtue of their dependence, directly or indirectly, from an indefinite claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12 and 13, as far as they are definite, 14-16 and 24-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawano et al. (U.S. Patent 3,918,627).

Kawano et al. discloses an axial or mixed flow fan comprising fan blades (13) extending from a hub (5) provided with a deflector ring at the air delivery end of the rotational axis, each fan blade including an extension adjacent the hub (In figure 1 the blades connecting band ring 14 to crown ring 5 begin to become wider approximately halfway between the band ring 14 and the crown ring 5. This triangular addition is considered to be the extension) in the air delivery direction such that an area which is not filled in is bounded by the blade edge and a notional straight line joining the

extension and a corner of the blade (similar line can be drawn connecting the appropriate blade parts on figure 1).

Regarding claim 13, Kawano et al. discloses a hub deflector ring (5) in the fan is of a cross section which broadens towards the air delivery end of the rotational.

Regarding claim 14, Kawano et al. discloses a hub deflector ring is of a curved cross-section (crown ring 5 is curved about an axis) becoming increasingly broad towards the air delivery end of the rotational axis.

Regarding claim 15, Kawano et al. discloses an extension that is triangular (previously mentioned extension was described in rejection of claim 12).

Regarding claim 16, Kawano et al. discloses fan blades that have axes which lie in planes generally radial of the rotational axis, but which axes are inclined in that plane so as to be contained on the surface of an imaginary cone instead of lying in a plane normal to the axis of rotation (figure 2).

Regarding claim 24, Kawano et al. discloses an axial or mixed flow fan comprising fan blades (13) extending from a hub (5) provided with a deflector ring at the air delivery end of the rotational axis, each fan blade including an extension adjacent the hub in the air delivery direction.

Regarding claim 25, Kawano et al. discloses the deflector ring (5) in the fan is of a cross section which broadens towards the air delivery end of the rotational axis.

Regarding claim 26, Kawano et al. discloses the deflector ring (5) in the fan is of a curved cross section becoming increasingly broad towards the air delivery end of the rotational axis.

Regarding claim 27, Kawano et al. discloses the extension is a triangle (previously discussed in rejection of claim 12).

Regarding claim 28, Kawano et al. discloses a mixed flow fan and the fan blades which have axes which lie in planes generally radial of the rotational axis, but which axes are inclined in that plane so as to be contained on the surface of an imaginary cone instead of lying in a plane normal to the axis of rotation (figure 2).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-22, as far as they are definite, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. in view of Peter-Fenner et al. (U.S. Patent 6,547,517).

Kawano et al. teaches those elements as rejected in claim 12 and claim 24.

Kawano et al. does not disclose blades having adjustable pitch, having a part spherical hub, a part spherical shroud, or an extension extending the root of the fan blade substantially to the outer edge of the deflector ring.

However, Peter-Fenner et al. teaches a fan with blades having adjustable pitch (col 3. line 60-65), having a part spherical hub (290), a part spherical shroud (220), and an extension extending the root of the fan blade substantially to the outer edge of the

deflector ring (figure 8) for the purpose of allowing fan manufacturers to make fans with a variety of blade angles (col. 4 lines 55-61), imparting the ability to rotate blades by having a complimentary shape at each blade end (col. 4 lines 45-54) and ensuring the blade mates against the hub (col. 3 lines 45-52)

Since Kawano et al. and Peter-Fenner et al. are in the same field of endeavor, the purpose disclosed by Peter-Fenner et al. would have been recognized in the pertinent art of Kawano et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to add blade adjustability, a spherical hub and shroud, and extend the blades to the outer edge of the deflector ring to the fan of Kawano et al. as taught by Peter-Fenner et al. in order to allow fan manufacturers to make fans with a variety of blade angles (col. 4 lines 55-61), impart the ability to rotate blades by having a complimentary shape at each blade end (col. 4 lines 45-54) and ensure the blade mates against the hub (col. 3 lines 45-52).

### ***Conclusion***

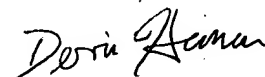
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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3/19/05